

Table B-2. Survey of Industrial Research and Development—relative standard error for survey estimates, by industry and size of company: 2000

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Industry and size of company	NAICS codes	Number of R&D-performing companies <sup>1</sup>	Domestic net sales of R&D performers	Domestic employment of R&D performers	Number of FTE scientists and engineers	Total R&D	Company and other funds for R&D	Company- financed R&D performed outside of U.S.	Company- financed R&D contracted to outside organizations	Federal funds for R&D	
											[Percent]
Distribution by industry:											
All industries.....	21–23, 31–33, 42, 44–81	3,583	3.0	2.8	1.6	2.5	2.8	3.2	33.0	1.9	
Manufacturing.....	31–33	1,980	2.4	3.9	1.1	0.8	0.9	1.0	4.6	0.7	
Food.....	311	76	6.2	21.3	5.1	(D)	10.6	(S)	0.8	50.5	(D)
Beverage and tobacco products.....	312	6	2.6	3.7	1.3	0.8	0.8	(D)	(D)	0.0	
Textiles, apparel, and leather.....	313–16	77	9.6	9.2	5.1	(D)	5.7	(D)	48.0	(D)	
Wood products.....	321	23	5.0	5.8	(S)	4.4	3.6	3.6	0.0	(D)	0.0
Paper, printing and support activities...	322, 323	37	7.6	11.4	(S)	1.8	(D)	0.4	(D)	(D)	(D)
Petroleum and coal products.....	324	12	3.6	7.4	(S)	6.4	(D)	3.6	0.0	(D)	(D)
Chemicals.....	325	179	2.7	3.0	2.9	1.8	1.8	3.1	0.6	4.3	
Basic chemicals.....	3251	58	9.0	10.8	17.0	17.2	17.4	43.3	(D)	0.2	
Resin, synthetic rubber, fibers, and filament.....	3252	15	2.4	2.2	0.5	0.2	0.2	(D)	(D)	0.0	
Pharmaceuticals and medicines.....	3254	45	1.4	3.9	1.6	(D)	0.5	0.0	0.0	(D)	
Other chemicals.....	325 (minus 3251–52, 3254)	61	6.1	5.1	(S)	4.5	(D)	2.6	(D)	0.2	(D)
Plastics and rubber products.....	326	165	5.3	6.5	5.5	(D)	4.0	0.2	0.9	(D)	
Nonmetallic mineral products.....	327	54	4.7	6.7	23.5	5.5	5.5	5.2	10.3	18.6	
Primary metals.....	331	57	3.7	4.8	(S)	4.2	9.0	9.4	(D)	3.6	0.0
Fabricated metal products.....	332	165	5.4	5.5	7.4	5.0	5.2	3.4	28.5	1.5	
Machinery.....	333	177	4.7	4.0	3.3	4.2	4.2	8.0	52.9	10.1	
Computer and electronic products.....	334	385	3.5	3.6	(S)	1.6	0.9	1.0	0.6	4.2	0.9
Computers and peripheral equipment.....	3341	52	17.6	17.1	2.9	1.9	1.9	1.8	0.2	0.0	
Communications equipment.....	3342	67	6.1	3.4	(S)	2.1	2.4	2.5	(D)	(D)	0.0
Semiconductor and other electronic components.....	3344	97	3.4	9.7	(S)	4.7	1.5	1.5	0.0	(D)	0.0
Navigational, measuring, electromedical, and control instruments.....	3345	133	4.5	2.2	1.9	1.4	2.1	1.2	22.6	1.0	

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Distribution by industry:										
Other computer and electronic products.....	334 (minus 3341–42, 3344–45)	36	7.7	4.9	1.1	0.8	0.6	(D)	5.6	57.6
Electrical equipment, appliances, and components.....	335	80	2.2	3.5	3.5	(D)	3.9	0.4	3.0	(D)
Transportation equipment.....	336	137	0.9	2.6	0.8	0.4	0.6	0.1	0.4	0.0
Motor vehicles, trailers, and parts.....	3361–63	86	1.1	4.2	1.2	(D)	0.7	(D)	(D)	(D)
Aerospace products and parts.....	3364	20	0.3	0.8	0.4	0.2	0.6	(D)	(D)	0.0
Other transportation equipment.....	336 (minus 3361–64)	31	3.1	3.1 (S)	3.3	(D)	4.9	(D)	(D)	(D)
Furniture and related products.....	337	70	54.8	5.5 (S)	6.3	4.2	4.2	(D)	(D)	0.0
Miscellaneous manufacturing.....	339	189	4.9	3.1	3.8	1.7	1.7	0.5	18.1	6.8
Medical equipment and supplies....	3391	101	5.9	3.2	4.2	(D)	1.8	(D)	17.2	(D)
Other miscellaneous manufacturing.....	339 (minus 3391)	88	8.3	6.8	8.5	(D)	5.2	(D)	58.8	(D)
Other manufacturing .....	31–33 (minus 311–16, 321–27, 331–37, 339)	--	--	--	--	--	--	--	--	--
Small manufacturing companies <sup>2</sup> .....	Fewer than 50 employees	91	43.9	60.1	18.2	28.3	29.2	0.0	49.5	76.8
Nonmanufacturing.....	21–23, 42, 44–81	1,603	7.5	3.7	3.6	6.5	7.0	10.5	48.7	6.0
Mining, extraction, and support activities.....	21	34	3.8	2.9	1.4	0.7	0.7	0.0	(D)	57.0
Utilities.....	22	35	10.6	13.6	10.8	(D)	17.8	0.0	44.5	(D)
Construction.....	23	21	6.3	6.8	2.1	(D)	51.7	(D)	(D)	(D)
Trade.....	42, 44, 45	148	28.6	13.1	6.8	16.0	16.1	13.4	72.1	57.0
Transportation and warehousing.....	48, 49	19	12.8	3.0	44.1	(D)	16.7	0.0	55.5	(D)

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Distribution by industry:										
Information.....	51	258	0.9	1.0	2.7	2.6	2.5	4.3	2.6	13.2
Publishing.....	511	206	4.3	3.1	3.3	2.8	2.7	7.1	9.5	53.8
Newspaper, periodical, book, and database.....	5111	13	4.9	5.3	27.8	19.7	19.7	(D)	0.0	0.0
Software.....	5112	193	5.4	3.8	3.2	2.8	2.7	(D)	9.7	53.8
Broadcasting and telecommunications.....	513	15	0.1	0.1	1.3	(S) 3.1	4.2	(D)	(D)	(D)
Radio and television broadcasting.....	5131	1	(D)	(D)	0.0	(D)	(D)	0.0	0.0	(D)
Telecommunications.....	5133	13	0.1	0.1	1.1	(D)	(D)	(D)	(D)	(D)
Other broadcasting and telecommunications.....	513 (minus 5131, 5133)	1	(D)	(D)	69.6	69.6	69.6	0.0	0.0	0.0
Other information.....	51 (minus 511, 513)	37	2.4	5.9	7.1	10.3	9.4	(D)	(D)	71.2
Finance, insurance, and real estate.....	52, 53	48	4.6	8.4	16.1	52.0	52.0	(D)	56.4	60.3
Professional, scientific, and technical services.....	54	910	3.4	4.3	3.6	3.8	4.6	34.3	12.2	4.8
Architectural, engineering, and related services.....	5413	159	3.7	4.1	(S) 6.5	16.1	23.7	83.0	64.2	9.0
Computer systems design and related services.....	5415	331	8.5	8.8	8.1	6.5	6.7	(D)	20.9	21.1
Scientific R&D services.....	5417	384	2.6	6.0	3.3	3.2	3.4	2.8	11.8	5.8
Other professional, scientific, and technical services.....	54 (minus 5413, 5415, 5417)	36	8.7	12.2	26.2	36.7	39.1	(D)	13.3	64.3
Management of companies and enterprises.....	55	13	11.4	16.8	15.3	13.9	13.4	(D)	66.8	94.4
Health care services.....	621–23	32	32.6	35.4	40.6	47.7	48.5	(D)	9.4	57.3

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Distribution by industry:										
Other nonmanufacturing .....	56, 61, 624, 71, 72, 81	40	11.7	19.6	15.7	16.7	16.9	0.0	22.1	12.4
Small nonmanufacturing companies <sup>2</sup> .....	Fewer than 15 employees	45	21.1	18.0	36.6	37.2	41.2	99.5	89.4	51.7
Distribution by size of company: [Number of employees]										
Total.....	(na)	3,583	3.0	2.8	1.6	2.5	2.8	3.2	33.0	1.9
5 to 24.....	(na)	233	14.2	9.4	22.9	23.9	26.9	93.5	63.0	31.6
25 to 49.....	(na)	214	16.3	11.4	13.8	17.9	18.5	58.5	64.3	19.5
50 to 99.....	(na)	358	12.8	9.6	12.4	24.2	26.0	69.3	29.3	18.2
100 to 249.....	(na)	566	12.3	9.4	6.7	7.2	7.3	71.5	11.8	25.5
250 to 499.....	(na)	467	34.8	11.6	5.5	5.3	5.5	14.4	12.2	8.9
500 to 999.....	(na)	441	12.7	11.6	9.5	14.0	14.8	21.4	12.3	0.2
1,000 to 4,999.....	(na)	800	15.8	13.9	3.1	13.1	13.5	2.5	76.2	3.6
5,000 to 9,999.....	(na)	233	4.7	4.5 (S)	0.1	0.1	0.1	0.0	2.0	0.0
10,000 to 24,999.....	(na)	157	3.7	6.7	0.4	0.2	0.2	0.0	5.0	0.0
25,000 or more.....	(na)	114	0.1	0.3 (S)	0.7	0.2	0.2	0.2	0.0	0.0

<sup>1</sup> The counts of R&D-performing companies in this table are equal to the sum of the counts of companies with reported or imputed R&D expenditures of "greater than or equal to \$5 million" plus companies with reported or imputed R&D expenditures of "less than \$5 million" in Table B-1. The relative standard error (RSE) estimates are based on reported and imputed data.

<sup>2</sup> The frame from which the statistical sample was selected was divided into two partitions based on total company employment. In the manufacturing sector, companies with employment of 50 or more were included in the large company partition. In the nonmanufacturing sector, companies with employment of 15 or more were included in the large company partition. Companies in the respective sectors with employment below these values, but with at least 5 employees, were included in the small company partition. The purpose of partitioning the sample this way was to reduce the variability in industry estimates largely attributed to the random year-to-year selection of small companies by industry and the high sampling weights that sometimes were assigned to them. Because of this, detailed industry statistics were possible only from the large company partition; detailed industry statistics from the small company partition were not possible. Statistics from the small company partition are shown separately and are included in manufacturing, nonmanufacturing, and all industries totals. For more information, see "frame creation" and "sample selection" in the technical notes in this section.

**KEY:** (D) = RSE is not calculated for a cell from which data have been withheld to avoid disclosing operations of individual companies.

(S) = RSE shown is calculated for a cell with imputation of more than 50 percent.

(--) = Indicates data not collected.

(na) = Not applicable.

**NOTE:** A description of the standard error of estimate is given in this section under "Sampling Stratification and Relative Standard Error Constraints." The percentage (or relative) standard errors in this table may be converted to standard errors of estimate by multiplying the percentages shown by the associated estimates. For example, the relative standard error of estimate for company-funded R&D performance by the wood products industry (NAICS 321) is shown as 3.6 percent, and the associated company-funded R&D estimate for this industry is shown as \$105 million in Table A-7. The standard error of estimate is 0.036 times 105 million or 3.8 million.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, Survey of Industrial Research and Development 2000